

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Pinus sylvestris*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
30	(+)-CATECHIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
30	(+)-CATECHIN	Bark				--
30	(+)-CATECHIN	Leaf				--
7	(+)-GALLOCATECHIN	Leaf				--
38	(-)-EPICATECHIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
67	1,8-CINEOLE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ABIETIC-ACID	Shoot				--
3	ABIETIC-ACID	Resin, Exudate, Sap		180000.0	-1.4142135623730954	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
19	ACETYL-CHOLINE	Sprout Seedling				--
11	ADENINE	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ALPHA-CADINOL	Leaf Essent. Oil		19000.0	-1.0	--
3	ALPHA-CADINOL	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
7	ALPHA-CAROTENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ALPHA-HUMULENE	Leaf Essent. Oil		4600.0	-0.5601171534351933	--
11	ALPHA-PHELLANDRENE	Essential Oil				--
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil				--
11	ALPHA-PHELLANDRENE	Leaf				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	ALPHA-PINENE	Twig				--
28	ALPHA-PINENE	Plant				--
28	ALPHA-PINENE	Flower				--
28	ALPHA-PINENE	Essential Oil				--
28	ALPHA-PINENE	Resin, Exudate, Sap				--
28	ALPHA-PINENE	Leaf Essent. Oil		312000.0	0.9632438931581422	--
28	ALPHA-PINENE	Leaf	600.0	2500.0	-0.062233154531755666	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	ALPHA-PINENE	Root Essent. Oil	175000.0	200000.0	1.0055904952191068	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
13	ALPHA-TERPINENE	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
13	ALPHA-TERPINENE	Essential Oil				--
13	ALPHA-TERPINENE	Leaf Essent. Oil		34500.0	2.2661395470708254	--
13	ALPHA-TERPINENE	Leaf				--
23	ALPHA-TERPINEOL	Leaf Essent. Oil	6500.0	167000.0	2.509529498910562	--
1	ANDROSTENEDIONE	Pollen Or Spore				--
36	ANETHOLE	Leaf Essent. Oil				--
7	ANISALDEHYDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
112	ASCORBIC-ACID	Leaf		3000.0	-0.16555832480808047	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
20	BENZOIC-ACID	Leaf				--
53	BETA-CAROTENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	BETA-ELEMENE	Essential Oil				--
2	BETA-MYRCENE	Resin, Exudate, Sap				--
2	BETA-MYRCENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	BETA-PHELLANDRENE	Twig				--
3	BETA-PHELLANDRENE	Flower				--
3	BETA-PHELLANDRENE	Essential Oil				--
3	BETA-PHELLANDRENE	Leaf Essent. Oil		13000.0	0.1553903686246635	--
3	BETA-PHELLANDRENE	Resin, Exudate, Sap				--
13	BETA-PINENE	Resin, Exudate, Sap				--
13	BETA-PINENE	Leaf	200.0	1500.0	1.7833577159120335	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	BETA-PINENE	Twig				--
13	BETA-PINENE	Root Essent. Oil	175000.0	200000.0	1.6637047098912103	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
13	BETA-PINENE	Flower				--
13	BETA-PINENE	Essential Oil				--
13	BETA-PINENE	Leaf Essent. Oil		65000.0	2.10395512758855	--
3	BETA-SELINENE	Wood				--
47	BETA-SITOSTEROL	Pollen Or Spore				--
47	BETA-SITOSTEROL	Shoot				--
47	BETA-SITOSTEROL	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
47	BETA-SITOSTEROL	Plant				--
3	BETA-TERPINEOL	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
35	BORNEOL	Essential Oil				--
35	BORNEOL	Leaf Essent. Oil	6500.0	62000.0	0.16251562096096972	--
35	BORNEOL	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	BORNYL-ACETATE	Leaf	60.0	175.0	-0.314398718058706	--
6	BUTYRIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
102	CAFFEIC-ACID	Leaf				--
2	CAMPESTEROL	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	CAMPESTEROL	Plant				--
9	CAMPHENE	Leaf Essent. Oil		35000.0	0.3677628391862796	--
9	CAMPHENE	Essential Oil				--
9	CAMPHENE	Resin, Exudate, Sap				--
41	CAMPHOR	Leaf Essent. Oil				--
3	CAPRIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	CAPROIC-ACID	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
31	CARYOPHYLLENE	Leaf Essent. Oil				--
31	CARYOPHYLLENE	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	CHAMAZULENE	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
77	CHLOROGENIC-ACID	Leaf				--
20	CHOLINE	Flower		3400.0	0.43193421279068084	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
53	CITRAL	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
20	CITRONELLAL	Leaf Essent. Oil				--
1	COPAENE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	CUMINALDEHYDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
19	D-LIMONENE	Leaf				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
3	DEHYDROABIETANE	Wood				--
3	DEHYDROABIETANE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	DEHYDROABIETIC-ACID	Shoot				--
5	DEHYDROABIETIC-ACID	Resin, Exudate, Sap		70000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	DELTA-3-CARENE	Root Essent. Oil	400000.0	500000.0		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
8	DELTA-3-CARENE	Resin Essent. Oil	13000.0	360000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	DELTA-CADINENE	Leaf Essent. Oil		22300.0		--
9	DELTA-CADINENE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	DELTA-CADINENE	Essential Oil				--
1	DELTA-CADINOL	Leaf Essent. Oil		9100.0		--
3	DIHYDROQUERCETIN	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	DIPENTENE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
40	EPICATECHIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
12	ESTRAGOLE	Leaf Essent. Oil				--
12	ESTRAGOLE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
12	ESTRAGOLE	Resin, Exudate, Sap		106670.0		--
5	EUGENOL-METHYL-ETHER	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
6	FENCHONE	Leaf Essent. Oil				--
61	FERULIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	FRUCTOSE	Leaf		25000.0	0.3153707786254544	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	FRUCTOSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	FURFURAL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
1	GALACTOSE	Leaf		30.0	-1.0	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	GAMMA-CAROTENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
11	GAMMA-TERPINENE	Resin, Exudate, Sap				--
11	GAMMA-TERPINENE	Essential Oil				--
11	GAMMA-TERPINENE	Leaf Essent. Oil		5000.0	-0.6592175679045217	--
3	GINNOL	Pollen Or Spore				--
1	GLUCOSAMINE	Shoot				--
7	GLUCOSE	Leaf		22000.0	-0.42788248580564037	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	GLUCOSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	HUMULENE	Essential Oil				--
7	INDOLE-3-ACETIC-ACID	Sprout Seedling				--
7	INDOLE-3-ACETIC-ACID	Shoot				--
2	ISOPIMARIC-ACID	Shoot				--
2	ISOPIMARIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	L-LIMONENE	Leaf				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
60	LIMONENE	Shoot				--
60	LIMONENE	Flower				--
60	LIMONENE	Essential Oil				--
60	LIMONENE	Resin, Exudate, Sap				--
60	LIMONENE	Leaf Essent. Oil				--
1	LINARIN	Leaf				--
15	LUTEIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	MALONIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	MALTOSE	Plant				--
22	MYRCENE	Essential Oil				--
22	MYRCENE	Leaf Essent. Oil		34500.0	-0.23247237005406013	--
22	MYRCENE	Twig				--
22	MYRCENE	Flower				--
1	N-NONACOSANE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	NEOABIETIC-ACID	Resin, Exudate, Sap		180000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	NEOABIETIC-ACID	Shoot				--
2	NEOXANTHIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
25	P-COUMARIC-ACID	Pollen Or Spore				--
16	P-CYMENE	Leaf Essent. Oil		1600.0	-0.7549604300774599	--
16	P-CYMENE	Resin, Exudate, Sap				--
13	P-HYDROXY-BENZOIC-ACID	Bark				--
3	P-HYDROXYACETOPHENONE	Leaf				--
5	P-METHOXY-CINNAMIC-ACID	Pollen Or Spore				--
13	PALMITIC-ACID	Pollen Or Spore				--
2	PECTOLINARIN	Leaf				--
26	PHENOL	Wood				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINITOL	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINITOL	Leaf		20000.0	1.0	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	PINOCEMBRIN	Wood				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINOSYLVIN	Wood				--
5	PINOSYLVIN	Wood	2500.0	8000.0		--
5	PINOSYLVIN	Shoot				--
1	PROCYANIDIN-B-1	Leaf				--
2	PROCYANIDIN-B-3	Leaf				--
1	PROCYANIDIN-B-6	Leaf				--
1	PROCYANIDIN-C-2	Leaf				--
1	PRODELPHINIDIN	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	PROPIONALDEHYDE	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
43	PROTocatechuic-acid	Bark				--
176	QUERCETIN	Leaf				--
176	QUERCETIN	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Leaf				--
6	QUERCIMERITRIN	Leaf				--
1	QUINIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RAFFINOSE	Leaf		8000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RAFFINOSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RHODOXANTHIN	Leaf				--
5	SABINENE	Essential Oil				--
5	SABINENE	Leaf Essent. Oil		4500.0	-0.5646050792348103	--
5	SABINENE	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
14	SHIKIMIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	STACHYOSE	Plant				--
12	STIGMASTEROL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	SUCROSE	Leaf		17000.0	-0.4419983985239393	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SUCROSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SULFUR	Leaf				--
35	TANNIN	Bark		169000.0	0.2441891045370524	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
17	TAXIFOLIN	Leaf				--
23	TERPINEN-4-OL	Leaf Essent. Oil				--
23	TERPINEN-4-OL	Essential Oil				--
18	TERPINEOL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
9	TERPINOLENE	Essential Oil				--
9	TERPINOLENE	Resin, Exudate, Sap				--
9	TERPINOLENE	Leaf Essent. Oil		26000.0	1.7189798888776386	--
9	TERPINOLENE	Flower				--
11	TESTOSTERONE	Pollen Or Spore				--
9	VALERIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
24	VANILLIC-ACID	Bark				--
2	VIOLAXANTHIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	XYLOSE	Leaf		200.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
1	YLANGENE	Essential Oil				--